

Remarks – General

By the above amendment, Applicant has amended the title to emphasize the system of the invention. The amended title also emphasizes the reversibility of the direction of folding to close the tie.

Also, Applicant has rewritten all claims to define the invention more particularly and distinctly so as to overcome the technical rejections, and define the invention more clearly over the prior art.

Drawings: Applicant proposes to amend Fig 10 to clarify use as recited in new claims 41 - 60 and in new claims 75 - 84. No new matter will be inserted by this amendment; accordingly, Applicant requests approval. A proposed drawing amendment Sheet 6/10 is attached.

The Rejection on Lisenby Under §102

The O.A. rejected claims 1, 3, 5, 6, 9, 10, and 12 under §102 as being anticipated by Lisenby. These claims are canceled and replacement claims 21 - 84 are submitted. Applicant requests reconsideration of this rejection for the following reasons:

Applicant's Invention

Applicant's invention is both a tie and a novel system for using the tie. The combined tie and system provide unique ways of organizing and securing articles of any sort.

The tie transcends presently accepted limitations of gender specificity and the accepted requirement of surface contact inherent in dual-gendered releasable touch-surface fasteners such as hook and loop.

Applicant's method of use also defines a new principle of operation, i.e. clustering, to form clustered assemblages of held articles.

Applicant's method of use also defines weak securement as a novel and much-needed method of management for cables and the like.

Applicant's tie is provided in bulk form which may be divided and fashioned by the end-user to make smaller ties of variable size and shape.

The Tie: The Reversible Folding Tie comprises a two-sided, multi-segmented surface with complementary patches of hook and loop placed side-by-side, one patch on each segment, and on both opposing surfaces of each segment. Each segment of hook is connected to an adjacent segment of loop and the connected segments may be folded in either direction to form a folded interface between the respective first and second sides of the segments. When the segments are folded together in either direction, hook joins loop and the tie closes in a folded form.

In its simplest embodiment, Applicant's tie has two complementary segments joined by a foldable common support element. The reversible fold axis is placed halfway between a patch of hook on one segment, and a patch of loop on the other segment. The tie folds on the fold axis in either direction to engage hook to loop and hold the tie closed. The tie enfolds articles and holds them in the fold.

Applicant's tie is provided in a bulk form. The bulk form of the tie has repeating complementary segments with alternating complementary mating members on both sides of a foldable support element. The bulk form of the tie can take nearly any form, and may be strip-like, or sheet-like, or star-like. Applicant's tie may be used in its bulk form, as-is, to manage one or more articles. The bulk form of the tie can be separated into smaller tie subunits, each tie subunit having the unique structure of the tie: i.e two or more complementary segments providing male and female fasteners on both sides, with the two complementary fasteners juxtaposed side-by-side across a fold axis on each side of the tie.

The System of Folding and Attaching: In use, the tie is folded in either direction at a fold axis, whereupon one side of the tie closes adjacent segments face-to-face, in a parallel arrangement with a folded interface, connecting complementary touch-surface fasteners inside the fold. The connection of male to female fasteners inside the fold releasably closes the tie, and secures it in the folded form. When it folds, the tie may enfold one or more articles, which are held inside the closed fold by the releasable bond of male to female fasteners.

Applicant's tie does not require wrapping to close, rather it folds. Wrapping is more common than folding for article securing using touch-surface fasteners. Wrapping makes a

coil which resists shearing strain. Many prior-art devices are more or less elongate and wrapping typically produces a large interfacial surface connecting many hooks to many loops. The Reversible Folding Tie folds to close.

In the folded, i.e. closed, form the tie has both male and female fasteners exposed on the outside surfaces and will attach to any device having hook or loop on the outsides. **Applicant's tie will releasably attach to identical others while in the closed, i.e folded, form.** This feature enables a synergistic method of clustering like ties and modular management of the articles they hold.

The folded ties attach to each other to form clusters, providing a novel system of modular management of moveable articles. Applicant's simple tie folds to close, but unusual and surprising results arise when the tie is folded closed, because the folded tie presents both hook and loop on the outsides of the folded forms. The exposed hook and loop on the outsides of Applicant's folded ties permit the ties to be attached to each other, using the exposed hook and loop on the outsides. Applicant's ties stick together with like others when they are folded closed, thereby permitting modular management of the articles held by the ties. The held articles may be treated as modular attachable units in a clustered assemblage, which may be simply stuck together and pulled apart. Applicant teaches clustering as a previously undefined method of modular article management. **Clustering permits held articles to be simply stuck together, using Applicant's ties.** The clustered ties are oriented in easily adjustable assemblages of articles and the devices which secure them.

Clustering is a simple and useful management technique that permits articles to be interconnected in a modular fashion. The clusters of ties hold and join articles in a novel modular management technique that includes gendered devices of the prior art. **The tie cooperates synergistically with prior-art devices,** and enables combinations and uses of prior-art devices which are presently impossible.

Weak-Securement is a method of Applicant's invention that answers an unseen need. Excessive securement is a serious but unrecognized problem that is addressed by Applicant's tie. Excessive securement causes damage when cables are accidentally tugged. The folded tie may be joined to either hook or loop to provide weak securement, from which the held article may be released by tugging to separate hook from loop.

Spatial-Bridging is a method of Applicant's invention that meets an unseen need. The tie bridges other touch-surface fasteners together, where the other fasteners may not touch. The use of Applicant's tie as a spatial bridge is made possible because the tie has both fasteners exposed on the outsides, hence it will join to hook or loop on both sides of the tie, and thereby bridge between touch-surface fasteners.

Same-Gender bridging is a method of Applicant's invention that meets an unseen need. The tie bridges between incompatible same gender-type touch-surface fasteners. The use of the tie as a same-gender bridge is made possible because the unfolded form of the tie has both genders on both sides, hence it will provide a gender-positive bridge between gendered fasteners having the same gender-type. It is presently accepted that like-gendered fasteners may not be attached. **Applicant's invention transcends limitations that are commonly accepted as natural and unavoidable. Applicant's tie changes the rules.**

Lisenby's Invention

Lisenby teaches a two-ended, two-sided, flat rectangular strap for adjusting the spacing of two separated elements of a combination lap and shoulder seat belt. Lisenby's apparatus has hook and loop located at two separate fold axes, with hook and loop placed across each fold line in both locations. At each of the two fold axes, hook and loop are placed side-by-side on just one side of the strap.

Lisenby Folds In Two Places; In One Direction Only At Each Fold: Lisenby's apparatus enfolds two discrete and separated belt elements. The strap must fold in exactly two places, having one fold for the lap belt element and another for the shoulder belt element. One end of the strap folds toward the center to join hook to loop and hold the shoulder belt portion. The other end of the strap folds toward the center, in the other direction, to join hook to loop and thereby hold the lap belt portion.

At each of the two separated folds, Lisenby's apparatus has patches of hook and loop juxtaposed across the fold on one side of the strap, so it closes hook to loop when it folds in a single direction only at each fold.

Lisenby's Apparatus Is Unitary, Complete and Non-Divisible: Lisenby teaches a stand-alone apparatus that is not used with other similar apparatus or divided to make subunits of itself.

General Differences of Applicant's Invention Over Lisenby

Lisenby's Apparatus is Not Modular: Lisenby teaches a device that is not able to be used as part of a cooperative, modular system. The apparatus of Lisenby is a stand-alone item that does not cooperate with others of its own kind. Lisenby's apparatus has no gendered fasteners exposed on the outside of the fully closed apparatus, hence it will not connect to other fasteners when closed. Lisenby's apparatus may only be used singly and alone. Applicant's tie is part of a modular system of article management utilizing novel clusters, wherein like ties cooperate to collect and hold multiple articles in discrete units or in bundles. The tie's modular system also synergistically connects with other gendered devices of the prior art, and bridges between incompatible touch-surface fasteners or such fasteners which may not touch. This unusual use is seen in Applicant's Figs 6, 8 and 10.

Lisenby's Apparatus Is Not Provided In Bulk: Lisenby's apparatus is a singular and complete unit that is not capable of providing a bulk form of smaller apparatus with the form and function of the bulk apparatus. Applicant's device is readily formed of repeating segmented subunits in a bulk form that is subdivided to form smaller, fully functional Reversible Folding Ties. Applicant's device, as seen in Figs 1, 5, 12 and 14, may be provided in a segmented bulk form which is readily divisible into smaller subunits. The bulk tie of Fig 5 and each of the subunits cut from the bulk tie, as seen in Fig 6, all have the essential elements of Applicant's tie.

Lisenby's Apparatus Only Has Fastening Members On One Side of The Strap At Each Fold: Lisenby's apparatus doesn't fold in reverse directions to close. Applicant's device has both fastening members located across the fold axis and on both sides of the tie. Therefore Applicant's tie is reversible in its direction of folding-to-close at each fold axis. **Neither fold of Lisenby's apparatus is reversible with respect to the direction of folding-to-close.**

Applicant's New Claims Define Over Lisenby Under §102

Applicant's Device Has Hook and Loop Located On Both Sides of The Tie Across a Reversible Fold Axis:

A. Applicant's new independent claims 21, 31, 41, 51, 61, 67 and 75 recite the placement of complementary hook and loop on both sides at each fold axis. Applicant's placement of **hook and loop on both sides at each fold axis** is distinct from Lisenby's single-sided placement of hook and loop at each of the two fold axes.

Specifically, Applicant's new independent claims 21, 31, 41, 51, and 75 recite, "reversible-folding and joining means for joining at least two adjacent segments and providing a fold axis, said fold axis permitting said adjacent segments to fold together in first and second directions, said reversible fold axis placed medially between said respective first sides of said first and second segments that have said complementary mating members of said first pair; said reversible fold axis placed medially between said respective second sides of said first and second segments that have said complementary mating members of said second pair".

Applicant's claims 21, 31, 41, 51, and 75 thereby distinguish from Lisenby because they recite both genders on both sides of the tie at each fold axis. Lisenby, on the other hand, has mating members of the fastener pair on only one side of the strap at each of the two fold axes.

Moreover, **Lisenby's apparatus is not reversible in its direction of folding-to-close at either of the fold axes.** Applicant's claims 21, 31, 41, 51, and 75 recite multiple directions of folding that join hook to loop and thereby close the tie at each fold. This represents both a distinction and an advantage for Applicant's tie over that of Lisenby.

The dependent claims 22 - 30, incorporate all of the subject matter of claim 21 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

The dependent claims 32 - 40 incorporate all of the subject matter of claim 31 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

The dependent claims 42 - 50 incorporate all of the subject matter of claim 41 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

The dependent claims 52 - 60 incorporate all of the subject matter of claim 51 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

The dependent claims 76 - 84 incorporate all of the subject matter of claim 75 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

Similarly, Applicant's independent claim 61 recites "said first and second segments being separated from one another by a gap, said gap being spanned by at least one narrowed twisting-folding-spanning element, said element spanning said gap and connecting adjacent segments to one another", and "said gap placed medially between said respective first sides of said first and second segments that have said complementary mating members of said first pair; said gap placed medially between said respective second sides of said first and second segments that have said complementary mating members of said second pair".

Applicant's claim 61 distinguishes from Lisenby because it recites both genders on both sides of the tie at a single fold axis. Lisenby, on the other hand, has mating members of the fastener pair placed on only one side of the strap at each of the two fold axes.

Moreover, Lisenby's apparatus is not reversible in its direction of folding-to-close at either of the fold axes. Applicant's claim 61 recites multiple directions

of folding that join hook to loop and thereby close the tie at each fold. Specifically, claim 61 recites "first and second segments can be folded together in said first direction at said gap" and "first and second segments can be folded together in said second direction at said gap".

The reversible direction of folding, as recited in claim 61 (above) represents both a distinction and an advantage for Applicant's tie over that of Lisenby.

The dependent claims 62 - 66 incorporate all of the subject matter of claim 61 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

Similarly, Applicant's independent claim 67 recites "a reversible fold axis between adjacent segments, said fold axis permitting said adjacent segments to fold together in first and second directions, said reversible fold axis placed medially between said respective first sides of said first and second segments that have said complementary mating members of said first pair; said reversible fold axis placed medially between said respective second sides of said first and second segments that have said complementary mating members of said second pair".

Applicant's claim 67 distinguishes from Lisenby because it recites both genders on both sides of the tie at a single fold axis. Lisenby, on the other hand, has mating members of the fastener pair placed on only one side of the strap at each of the two fold axes.

Moreover, Lisenby's apparatus is not reversible in its direction of folding-to-close at either of the fold axes. Applicant's claim 67 recites multiple directions of folding that join hook to loop and thereby close the tie at each fold. This represents both a distinction and an advantage for Applicant's tie over that of Lisenby.

The dependent claims 68 - 74 incorporate all of the subject matter of claim 31 and add additional subject matter and therefore are a fortiori patentable over

Lisenby.

Lisenby's Apparatus Is Not Provided In Bulk:

B. Applicant's new dependent claims 30, 40, 50, 60, 66, 74 and 84 recite the divisibility of Applicant's bulk Reversible Folding Tie into the essential components of the tie.

Specifically, the claims noted recite, "bulk reversible folding tie having at least four segments; said bulk reversible folding tie being separated into at least two smaller reversible folding ties, each of said smaller reversible folding ties having at least two segments".

This distinguishes over Lisenby because Lisenby's apparatus does not have four segments, nor may Lisenby's apparatus be divided into functional subunits. Dividing Lisenby's apparatus would destroy the utility of the apparatus as taught.

Lisenby's Apparatus Is Not Used As Part Of a Modular System Of Article Management:

C. Applicant's new claims 31 - 60 and 75 - 84 recite Applicant's methods of using the Reversible Folding Tie in a cooperative method of article management.

Specifically, claim 31 recites "attaching at least two folded ties to one another; said folded ties being attached together by said releasable coupling between said complementary mating members of said releasable touch-surface fasteners disposed on the outsides of said folded ties, thereby to effect the clustered securement of said articles enfolded by said folded ties".

This distinguishes over Lisenby because the method of clustering with other ties is not taught by the apparatus of Lisenby. **Lisenby teaches a stand-alone apparatus which is not used with like others, nor with other gendered devices of the prior art.** Moreover, Lisenby could not be used in the

clustering method of Applicant's claim 31. **When Lisenby's apparatus is folded closed, all of the touch-surface fasteners are hidden in internal folds, and thereby inaccessible for joining with a compatible other type.** Hence, it is not possible to cluster Lisenby's apparatus with any other gendered devices, since Lisenby's apparatus has no touch-surface fasteners exposed on its outside surfaces when it is closed.

The dependent claims 32 - 40 incorporate all of the subject matter of claim 31 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

Similarly, the **method of spatial-bridging** in claim 41 recites, "providing a plurality of additional touch-surface fasteners having said complementary mating members; and

attaching each of said articles to one of said additional releasable touch-surface fasteners; and joining at least of two of said articles to said reversible folding tie; whereby said reversible folding tie provides a spatial bridge to connect together said additional touch-surface fasteners, thereby to effect organization and detachable securement of said articles.“.

Thus Applicant distinguishes over Lisenby because the spatial-bridging method of cooperative use with other gendered fasteners recited in claim 41 is not taught by Lisenby. Moreover, the method of spatial-bridging of Applicant's claim 41 is not available to the apparatus of Lisenby because **when Lisenby's apparatus is folded closed, all of the touch-surface fasteners are occupied and covered in internal folds.**

The dependent claims 42 - 50 incorporate all of the subject matter of claim 41 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

Applicant's **method of same-gender bridging** in claim 51 recites, "providing a plurality of additional touch-surface fasteners having the same member type, and attaching each of said articles to one of said additional touch-surface

fasteners having the same member type, and joining at least two of said additional touch-surface fasteners having the same member type to fasteners of the opposite member type on said reversible folding tie“.

Thus Applicant distinguishes over Lisenby because the method of gender-bridging recited by Applicant's claims 51 is not taught by Lisenby. Lisenby does not teach cooperation with other devices.

The dependent claims 52 - 60 incorporate all of the subject matter of claim 51 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

Applicant's **method of weak securement** is not taught by Lisenby. Specifically, claim 75 recites, “a method of weak-securement for modular management of moveable articles” and “providing at least one additional touch-surface fastener; and pressing said additional touch-surface fastener to an exposed fastener on the outside of said tie, to mate said additional touch-surface fastener to said exposed fastener, such that said tie and said additional touch-surface fastener are attached together and may be pulled apart by tugging; thereby to provide weakly-secure attachment for said articles held by said reversible folding tie”.

This distinguishes Applicant from Lisenby because **Lisenby teaches strong securement**. Lisenby states (Col 3, l 60 - 62) that the apparatus is to be formulated with fasteners of sufficient shear strength to prevent disengaging when the strap is in use.

The dependent claims 76 - 84 incorporate all of the subject matter of claim 75 and add additional subject matter and therefore are a fortiori patentable over Lisenby.

Applicant Provides Ties In Shapes Not Taught by Lisenby.

Specifically, Applicant's furcated tie (claim 27, 37, 47, 57, 64, 71 and 81) provides a novel forked structure that is not described by Lisenby.

Applicant's star-like tie (claims 28, 38, 48, 58, 65, 72 and 82) provides a novel star-burst structure that is not taught by Lisenby.

Applicant's checkerboard-like tie (claims 29, 39, 49, 59, 73, and 83) provides a novel horizontal-array and vertical-array structure that is not taught by Lisenby.

The cited claims are independently patentable over Lisenby because they recite novel shapes not taught by Lisenby.

Therefore Applicant submits that claims 21 - 84 define novel features over Lisenby under §102.

The Novel Subject Matter of Claims 21 - 84 Produce New and Unexpected Results and Hence Are Unobvious and Patentable Over Lisenby Under §103

Applicant submits that the novel features recited by claims 21 - 84 are also unobvious and hence are patentable under §103 since they produce new and unexpected results over Lisenby. These new and unexpected results include:

1. Clustering is a New Operational Principle:

Applicant's invention provides the ability to cluster, as recited in claim 31 and shown in Fig 6. Clustering is a previously unarticulated principle of operation. The prior art of cable management has overlooked clustering, which is a simple and elegant method of modular management of discrete and multiple cables. The simple, light-duty securement provided by a relatively small interfacial contact area of clustered touch-surface fasteners is a new and improved principle of operation for managing many common articles such as computer cables. Lisenby's apparatus is intended to be used alone. Hence, it would not be obvious to cluster similar apparatus together, or to use them with other gendered devices. Lisenby teaches a stand-alone and complete unitary

structure for the purpose of separating and securing discrete seat belt elements.

2. Applicant's Invention Solves Three Unrecognized Problems:

The prior art for cable management has failed to recognize the problem of excessive securement. Also unrecognized is the problem of attaching articles having gendered touch-surface fasteners when the fasteners have the same gender. Additionally overlooked is the problem of connecting touch-surface fasteners when the surfaces of the fasteners may not touch. Applicant's tie solves these three unrecognized problems with unusual simplicity and elegance.

a) The problem of excessive securement is unrecognized and unaddressed in the prior art for cable management. Most of the prior-art devices for securing cables emphasize strength of securement. However, computer cables should not have strong securement and actually suffer from excessive securement when the cables are accidentally tugged. Applicant's tie intentionally forms weakly-secure attachment for cables and thereby meets an unrecognized need for weak securement in such light-duty applications. Weak securement as recited in Applicant's claim 75 and seen in Applicant's Fig 9, provides for an improved method of management for the cables it secures, as they may be easily freed when they're accidentally or intentionally pulled. Such a solution is previously unknown to Applicant, though urgently needed. Lisenby's apparatus is intended to reconfigure seat belts. Lisenby states (Col 3, l 60 - 62) that the apparatus is to be formulated with fasteners of sufficient shear strength to prevent disengaging when the strap is in use. Weak-securement, as taught by Applicant, would therefore be unobvious to Lisenby because he would not consider excessively secure fastening as a problem.

b) The assumed need for gendered touch-surface fasteners to touch in order for joining to occur is another unrecognized problem addressed by Applicant's tie. This problem is unrecognized, even though gendered devices commonly are used to secure cable bundles that are sized and shaped so as to prevent physical contact between the cinched fasteners of the securing devices. Applicant's tie has outwardly exposed fasteners on both sides, and thereby serves as an intermediary spatial bridge, permitting touch-surface fasteners to be attached to one another without actually touching each other. This novel solution is described in claim 41 and seen in Fig 10. Applicant thereby solves another unrecognized problem and overcomes an accepted limitation in the use of touch-surface fasteners. Lisenby's apparatus is a stand-alone apparatus which is not intended to cooperate with other touch-surface fasteners. Lisenby would not consider the problem of non-interoperability of such fasteners due to surface-contact

limitations, because Lisenby's apparatus doesn't connect to other gendered devices.

c) A third unrecognized problem solved by Applicant's tie is the unquestioned limitation of gender compatibility for the attachment of gendered devices. It is currently accepted that no two articles may be attached together using hook and loop if both articles have the single and same gender fastener exposed. There is an assumed unworkability in all prior-art devices for article management using touch-surface fasteners. Conventional wisdom teaches that one must have male fastener type on one article, and female type on the other, or attachment will fail. Applicant's tie provides an intermediary, gender-positive bridge, permitting touch-surface fasteners to be attached to one another without regard to their genders. Applicant's method, as recited in claim 51 and seen in Fig 10, permits like-gendered articles to be attached together and so transcends a galling limitation that is presently accepted as natural and unavoidable. Lisenby's apparatus is a stand-alone apparatus which is not intended to cooperate with other touch-surface fasteners. Lisenby would not consider the problem of non-interoperability of other fasteners due to gender incompatibility, because Lisenby's apparatus doesn't work cooperatively with any other gendered devices. **Because the problem doesn't exist for Lisenby, Applicant's solution would not be obvious.**

3. Applicant's Tie Omits Elements Deemed Essential By Lisenby:

Lisenby requires two separate folding axes, each with a single-side placement of hook and loop at the fold. The simplicity of Applicant's tie is distinct from Lisenby's complex structure. As recited in independent claims 21, 31, 41, 51, 61, 67, and 75, Applicant's tie omits all but one axis of folding, and all but one occurrence of either gender fastener on each side of the device. The omission of all but these essential elements actually improves upon the functionality provided by Lisenby's apparatus, and further provides previously unappreciated utility in the form of clustering, spatial bridging, gender bridging, weak securement, provision in bulk form, and synergy with prior-art devices.

4. The Unappreciated Advantages of a Reversible Fold:

Applicant's use of a simple reversible fold as the single and only operational step represents an unappreciated advantage in all of the prior-art devices for managing cables. The reversible fold, which may be seen in Fig 2 and others, is recited in Applicant's independent claims 21, 31, 41, 51, 61, 67, and 75. Lisenby would not consider Applicant's reversible fold as obvious, because Lisenby places hook and loop on only one side of the apparatus at each fold axis, hence there

would be no mating of hook to loop upon folding Lisenby's apparatus in a reverse direction.

5. Prior Lack of Implementation Indicates Unobviousness:

The elemental simplicity of Applicant's device has eluded the attention of previous designers. The fact that the advantages of Applicant's tie have not been implemented, in spite of the very large number of related devices, strongly suggests that the structures and methods claimed by Applicant are not obvious. Applicant's tie can easily perform the function of Lisenby's apparatus. However, Lisenby and others, when faced with their respective problems, did not create Applicant's simple tie as a solution. Applicant submits that this shows that the novel solution represented by Applicant's tie is not obvious.

6. Applicant's Tie Includes Unsuggested Modifications:

The addition of a narrowly bridged gap between adjacent segments of a foldable tie is a previously unsuggested modification that provides useful advantages in both form and function. This previously unsuggested modification is recited in Applicant's dependent claims 24, 25, 34, 35, 44, 45, 54, 55, 69, and 79. The spanned gap is also recited in Applicant's independent claim 61. The modification is seen in Applicant's Figs 1, 3, 5, 6, and 14. The ability to modify the closing behavior of a folding device, by simply twisting the support element at a discontinuity, is previously unknown. Moreover, the conformational flexibility imparted by the flexible spanning element is an unusual and useful improvement. Lisenby has no suggestion, expressed or implied, that a discontinuity or gap spanned by a narrow-twisting-folding element is useful or desirable. Because Lisenby doesn't have fasteners on both sides at each fold axis, twisting and folding at a spanned discontinuity would not be an obvious modification to Lisenby.

7. Applicant's Tie Makes a Significant Advance in a Crowded Art:

In spite of the multitude of different devices using gendered fasteners for managing moveable articles, Applicant's invention makes a novel and much-needed contribution to the common problems it discovers and addresses. The prior provision of a reversible folding, self-adhering, reusable bulk strip, star, or sheet that can be cut to almost any size or configuration is unknown to Applicant. The tie represents a simple, but uniquely useful advance in a very crowded field. Applicant submits that an advance in such a crowded and important field declares strongly in his favor.

8. Applicant's Tie Has Synergism With Existing Art:

Lisenby's apparatus is not used with other devices. If the apparatus of Lisenby were attached to other devices of the prior art, it would not function as intended because the mating surfaces would be occupied and the apparatus would not close to secure the seat belt. Hence, it would not be obvious to combine Lisenby's apparatus with other gendered devices. Because of its unique structure using common materials, Applicant's tie cooperates with existing gendered article-management devices as recited in independent claims 41 and 51. The tie adds utility to the uses of existing devices by permitting them to be joined together in previously impossible combinations. Applicant's system of cooperating with prior-art devices achieves surprising results greater than the sum of its parts, creating a true synergy with existing article management devices.

9. Provision In Bulk Is Uncommon:

Applicant's tie is provided as repeating elemental subunits in a bulk tie form. Rolls, stacks or wads of Applicant's tie may be subdivided and fashioned into fully functional subunits. Applicant thus teaches a tie having utility similar to that found in rolls of adhesive tape, or perforated sheets of twist ties. Applicant's bulk tie can be used as-is in the undivided bulk form to secure articles, or it may divided to form smaller ties. **Provision in bulk is a very useful but unusual property among cable ties.** The provision in bulk as recited in dependent claims 30, 40, 50, 60, 66, 74, and 84 is an exceedingly useful feature that arises from the uniquely simple structure of Applicant's tie. Provision in bulk is **an unexpected and surprising result** of the simple structure of Applicant's tie and may be seen in Applicant's Figs 1, 5, 12, and 14.

Provision in bulk form is unsuggested by Lisenby. Lisenby's apparatus is intended to be used alone on a single lap and shoulder belt and there is no suggestion that his belt adjuster be subdivided to make more belt adjusters to be used together.

Therefore, Applicant submits that allowance of new claims 21 - 84 is proper, and he respectfully requests the same.

The Rejection On McConnell Under §102

The O.A. rejected Claims 14 and 16 as being anticipated by McConnell under §102. Claims 14 and 16 are canceled. New claims 21 - 84 are substituted to distinguish over McConnell. Applicant requests reconsideration of this rejection for the following reasons:

Applicant's Invention

Is discussed above.

McConnell's Invention

McConnell teaches a tree skirt for encircling a tree. The skirt comprises an unsegmented flat sheet having top and bottom edges, two free ends, and two opposing sides. The two free ends are equipped with the mating halves of a common zipper. The top and bottom edges have hook and loop on both opposing sides.

In use, the skirt encircles a tree and abuts end to end, whereupon the ends are zippered together. After the ends are zippered together to form a cylinder around the tree, the cylindrical skirt is hinged at the zipper and folded back onto itself to form a pleat. The pleat is formed to take up the slack between the skirt and the tree.

McConnell Doesn't Teach a Folding Tie: The O.A. States on Page 3, paragraph 3, that "McConnell teaches a folding tie ", which is not accurate. McConnell teaches a unitary and unsegmented skirt which encircles a tree. The skirt does not fold to encompass the tree. The open form of the skirt is curved into a circle whereupon the free ends of the skirt abut end to end. The two ends have complementary zipper halves affixed to them, which zip the free ends together, thereby closing the circle and forming the skirt. Hence, McConnell's device is not a folding tie, it is rather an encircling skirt.

Folding occurs in McConnell's skirt, but folding is not used to close the skirt and encompass the tree. Folding is undertaken to tighten the skirt after it encircles the tree.

Folding as taught by McConnell involves the creation of a pleat. A pleat is different from a fold. A fold occurs at a single folding axis, and creates a single parallel interplanar interface.

Pleating, on the other hand, occurs simultaneously at two folding axes, and results in two interplanar interfaces. I.e., pleating simultaneously creates two complementary folds and two interfaces between both opposing sides of the pleated plane.

General Differences of Applicant's Invention Over McConnell

McConnell's Skirt Is Not Segmented: McConnell's skirt is a single, unitary device that is not segmented as taught. Any division of McConnell's skirt into segments would be arbitrary and would defeat the purpose of McConnell's skirt, which is an unsegmented unit. Applicant's Reversible Folding Tie is formed of repeating complementary segments of hook and loop with a fold axis placed medially between the clearly complementary segments.

McConnell's Skirt Has a Pleat, Which is Not a Reversible Fold:

A pleat folds twice to form two interplanar interfaces. Applicant's tie folds once to form a single interplanar interface. Folding Applicant's tie at a single, medially placed, fold axis between segments results in a single interplanar interface inside the single fold. Applicant's single, medially placed, fold axis is illustrated in Applicant's Fig 2 and others.

There is no medial bisecting fold line in McConnell's skirt shown in Figs 1 and 2. To create a vertical fold line across, say, a planar axis extending top to bottom, from 30 generally through 22 is illogical. Such a fold line is fanciful, because **McConnell's skirt doesn't fold in the middle**. Such an arbitrary creation is contrary to McConnell's teaching. Similarly, the creation of a diagonal fold line from corner to corner would be fanciful, arbitrary, and contrary to the teaching. It is also arbitrary to create a horizontal fold line from side to side, generally from 28 to 32. Any demarcation of a central fold line in McConnell's open skirt seen in Figs 1 or 2 is fanciful, and not taught by McConnell. Rather, according to McConnell's teaching, Figs 1 and 2 have a radial arc of encircling that lies in the plane of the page. The radial arc runs along the entire length of the skirt from one zippered end to the other. The curved radial arc is seen in McConnell's Fig 3 extending clockwise generally from 20 to 60.

Applicant's tie folds once in the middle, between segments. McConnell's double-folding pleat is defined where the zippered edges of the skirt close to make a circle. McConnell's pleat forms at the edges, where it is located by the abutment of the two ends of the skirt, zippered

together. The pleating step taught by McConnell is illustrated in Fig 3, where the pleat is shown to have two simultaneous folds, generally at 36 and to the left of 56.

The first axis of the pleat (McConnell refers to each axis as a "hinge") is located at the seam formed at the zippered closure of the free ends of the encircling skirt. The first axis of the pleat is described in col 3, lines 43 and 44, where McConnell specifies that the "hinge for one of the seams in the pleated fold" is provided by the zipper, which is seen in Fig 3 at arrow 36.

McConnell's pleat is located and defined by the free ends of the open device.

The second hinge of McConnell's pleat occurs at some distance from the first; the distance between the first and second hinges of the pleat being defined by the difference between the circumference of the tree trunk and the circumference of the encircling tree skirt. The two hinges of the pleat may be observed in McConnell's Fig 3, where the first hinge is seen at 46 and the second hinge is seen to the left of 56.

Applicant's fold creates a single interplanar interface. The simple fold of Applicant's tie is seen in Applicant's Fig 4, where a single fold at axis 24 results in a single interplanar interface where 23 and 22 connect inside the fold.

A pleat simultaneously forms two interplanar interfaces. The two interplanar interfaces created by McConnell's pleat may be seen in McConnell's Fig 3, where the first interface of the pleat is formed between 56 and 60. The second interface of the pleat is seen at 54, on the inside of the space opposite 22.

McConnell's pleat is sequentially different from Applicant's fold. McConnell teaches a pleat formed after making the circle. McConnell's pleat is formed as a second-step in the operation of the device. Applicant's tie folds as the first and only necessary step to close the tie.

McConnell's pleat is logically different from Applicant's fold. Applicant's tie folds to hold an article and enable a method of modular management with other ties. McConnell's skirt pleats to tighten the skirt and to make the cylindrical skirt snug upon the tree. McConnell's pleat shortens the circumference of a skirt. Applicant's fold closes a tie.

McConnell Teaches a Skirt That is Not Used as a Part of a Cooperative, Modular System With Like Others: The tree skirt of McConnell teaches a stand-alone singular item that does not cooperate with others of its own kind. McConnell's skirt is not part of a system for bridging other gendered fasteners together, where such fasteners may not touch or where such fasteners have incompatible genders. McConnell's device is stand-alone as taught, and is not used together with others of its own kind in a modular system for clustering, weakly attaching, and managing moveable articles. Applicant's tie provides a system of inter-attaching like-gendered, and hence incompatible, touch-surface fasteners, as well as such fasteners that may not touch. This novel use is seen in Applicant's Fig 10. Applicant's device is intentionally modular and is used together with others of its own kind. This modular use is seen in Applicant's Figs 6 and 8.

Applicant's Tie is Provided in Bulk: McConnell teaches a device that is not divisible into fully functional subunits of itself. The tree skirt of McConnell is a singular, complete, and indivisible unit. Applicant's device, as seen in Figs 1, 5, 12, and 14, is provided in bulk form. The bulk tie is divided into smaller, but fully functional, Reversible Folding Ties. Applicant's smallest tie unit is seen in Fig 2 and others. **Dividing McConnell's skirt would destroy the skirt and render it unusable for the intended purpose of skirting a tree.**

Applicant's Tie Provides Weak Securement: McConnell's tree skirt closes with a zipper and thereby provides excessive securement for a stationary tree. Applicant's device weakly secures held articles with strength that is appropriate to the need.

Applicant's New Claims Define Over McConnell under §102

McConnell's Skirt is Not Segmented:

- A. **Applicant's tie is segmented.** Applicant's new independent claims 21, 31, 41, 51, 61, 67 and 75 recite the segmentation of Applicant's tie. Specifically, the claims recite "a segmented support element having at least first and second segments".

This distinguishes over McConnell, because **McConnell has no segments.** There is no segmentation taught by McConnell and no segmentation may be logically imposed on McConnell's skirt.

The dependent claims 22 - 30, incorporate all of the subject matter of claim 21 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 32 - 40 incorporate all of the subject matter of claim 31 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 42 - 50 incorporate all of the subject matter of claim 41 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 52 - 60 incorporate all of the subject matter of claim 51 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 62 - 66 incorporate all of the subject matter of claim 61 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 68 - 74 incorporate all of the subject matter of claim 67 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 76 - 84 incorporate all of the subject matter of claim 75 and add additional subject matter and therefore are a fortiori patentable over McConnell.

McConnell's Skirt Does Not Fold at a Medially Placed Fold Axis Between Adjacent Segments:

B. Applicant's tie has medial placement of a reversible fold zone between adjacent segments, on both major sides.

Specifically, claims 21, 31, 41, and 51 recite "reversible-folding and joining

means for joining at least two adjacent segments and providing a fold axis, said fold axis permitting said adjacent segments to fold together in first and second directions; said reversible-folding and joining means placed medially between said respective first sides of said first and second segments that have said complementary mating members of said first pair; said reversible-folding and joining means placed medially between said respective second sides of said first and second segments that have said complementary mating members of said second pair“.

This distinguishes Applicant's tie from McConnell's skirt because
McConnell has no reversible folding axis between segments. McConnell has no segments.

The dependent claims 22 - 30 incorporate all of the subject matter of claim 21 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 32 - 40 incorporate all of the subject matter of claim 31 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 42 - 50 incorporate all of the subject matter of claim 41 and add additional subject matter and therefore are a fortiori patentable over McConnell.

The dependent claims 52 - 60 incorporate all of the subject matter of claim 51 and add additional subject matter and therefore are a fortiori patentable over McConnell.

Applicant's new claim 61 recites the medial placement of a flexibly-spanned gap between adjacent segments. Specifically, claim 61 recites “first and second segments being separated from one another by a gap, said gap being spanned by at least one narrowed twisting-folding-spanning element ”

and “said gap placed medially between said respective first sides of said first and second segments that have said complementary mating members of said first pair; said gap placed medially between said respective second sides of said first and second segments that have said complementary mating members of said second pair”.

This distinguishes Applicant’s tie from McConnell’s skirt because **McConnell has no gap and no segments.**

The dependent claims 62 - 66 incorporate all of the subject matter of claim 61 and add additional subject matter and therefore are a fortiori patentable over McConnell.

Applicant’s claim 67 recites the medial placement of a reversible fold axis between adjacent segments. Specifically, claim 67 recites “a reversible fold axis between adjacent segments, said fold axis permitting said adjacent segments to fold together in first and second directions, said reversible fold axis placed medially between said respective first sides of said first and second segments that have said complementary mating members of said first pair; said reversible fold axis placed medially between said respective second sides of said first and second segments that have said complementary mating members of said second pair”.

The medial placement of a fold axis between segments distinguishes over McConnell because **McConnell has no segments and no medial fold axis.**

The dependent claims 68 - 74 incorporate all of the subject matter of claim 67 and add additional subject matter and therefore are a fortiori patentable over McConnell.

McConnell's Skirt is Not Provided in a Bulk Form That is Divided To Form Smaller Skirts:

C. Applicant's new dependent claims recite a **bulk tie divided into smaller functional subunits** having the essential components of the tie.

Specifically, claims 30, 40, 50, 60, 66, 74, and 84 recite a "bulk reversible folding tie having at least four segments; said bulk reversible folding tie being separated into at least two smaller reversible folding ties, each of said smaller reversible folding ties having at least two segments".

This distinguishes over McConnell because **McConnell cannot be divided into smaller skirts.**

McConnell's Skirt is Not Part of a Modular System of Article Management That Uses Multiple Similar Skirts and Also Incorporates Similar-Gendered Devices of the Prior Art:

D. **Applicant's tie provides novel methods of use.** Applicant's new independent claims 31, 41, 51 and 75 recite Applicant's method of using the tie in a weakly-secure cooperative and modular method using identical others, as well as other gendered fasteners.

Specifically, claim 31 recites a method of "attaching at least two folded reversible folding ties to one another".

This distinguishes Applicant's tie from McConnell's skirt because McConnell does not teach a cooperative method of use with other skirts.

The dependent claims 32 - 40 incorporate all of the subject matter of claim 31 and add additional subject matter and therefore are a fortiori patentable over McConnell.

Similarly, claim 41 specifically recites a method of "providing a plurality of additional touch-surface fasteners having said complementary mating members; and attaching each of said articles to one of said additional releasable touch-

surface fasteners; and joining at least two of said articles to said reversible folding tie; whereby said reversible folding tie provides a spatial bridge to connect together said additional touch-surface fasteners, thereby to effect organization and detachable securement of said articles“.

This distinguishes Applicant’s tie from McConnell’s skirt because
McConnell does not teach a cooperative method of use with other skirts.
McConnell teaches a stand-alone tree skirt.

The dependent claims 42 -50 incorporate all of the subject matter of claim 41 and add additional subject matter and therefore are a fortiori patentable over McConnell.

Similarly, claim 51 specifically recites a gender-bridging method of “providing a plurality of additional touch-surface fasteners having the same member type, and attaching each of said articles to one of said additional touch-surface fasteners having the same member type, and joining at least two of said additional touch-surface fasteners having the same member type to fasteners of the opposite member type on said reversible folding tie; whereby said reversible folding tie provides a same-gender bridge between said additional touch-surface fasteners having the same member type, to effect organization and detachable securement of said articles attached to said additional touch-surface fasteners having the same member type“.

This distinguishes Applicant’s tie from McConnell’s skirt because
McConnell does not teach a cooperative method of use with other ties.

The dependent claims 52 - 60 incorporate all of the subject matter of claim 51 and add additional subject matter and therefore are a fortiori patentable over McConnell.

Similarly, claim 75 specifically recites a “method of weak-securement for modular management of moveable articles” and “providing at least one additional touch-surface fastener; and pressing said additional touch-surface

fastener to an exposed fastener on the outside of said tie, to mate said additional touch-surface fastener to said exposed fastener, such that said tie and said additional touch-surface fastener are attached together and may be pulled apart by tugging; thereby to provide weakly-secure attachment for said articles held by said reversible folding tie".

This distinguishes Applicant's tie from McConnell's skirt because **McConnell does not teach a method of weak-securement**. McConnell uses a strongly secure zipper for the closure of his skirt. McConnell does not teach cooperation with other securing devices or other skirts of any sort.

The dependent claims 76 - 84 incorporate all of the subject matter of claim 75 and add additional subject matter and therefore are a fortiori patentable over McConnell.

Thus, claims 31, 41, 51, and 75 distinguish over McConnell because the method of modular use with other tree skirts and other securing devices having gendered fasteners is not taught by McConnell. McConnell's tree skirt is a stand-alone device that is not used with other skirts.

Therefore Applicant submits that claims 21 - 84 define a novel system and physical features distinguishable from McConnell under §102.

The Novel Features as Claimed Produce New and Unexpected Results and Hence Are Unobvious and Patentable Over McConnell Under §103.

Applicant submits that the novel physical features recited by claims 21 - 84 are also unobvious and hence are patentable under §103 since they produce new and unexpected results over McConnell.

These new and unexpected results include:

1. Clustering is a New Operational Principle:

Applicant's invention teaches a new principle of operation, i.e. clustering, that addresses a real but unseen need. Clustering is described in Applicant's claim 31 and seen in Fig 6. McConnell's

device is intended to be used alone, hence it would not be obvious to cluster similar devices together. Applicant teaches a new and unobvious way of managing articles using a novel tie.

2. Applicant's Invention Solves Three Unrecognized Problems:

a) The problem of excessive securement is unrecognized by McConnell.

McConnell's device closes end to end around a tree by use of a zipper. McConnell's use of a zipper, which is strongly secure, argues that McConnell does not consider excessive securement to be a problem.

Weak securement as recited in Applicant's claim 75 and seen in Applicant's Fig 9, provides for an improved method of management for the articles it secures, as they may be easily freed when they're accidentally or intentionally pulled.

b) A second problem, unrecognized by McConnell and addressed by Applicant's tie, is the assumed need for gendered touch-surface fasteners to touch for joining to occur.

McConnell's device is a stand-alone, singular device that is not intended to cooperate with other securement devices using touch-surface fasteners. Hence, McConnell does not recognize the problem of non-interoperability of such fasteners due to contact limitations. The novel method of spatial-bridging is described in Applicant's claim 41 and seen in Fig 10.

c) A third unrecognized problem solved by Applicant's tie is the unquestioned limitation of gender compatibility for the interconnection of gendered devices.

McConnell's skirt is a stand-alone and complete, independent device that is not intended to cooperate with other independent securement devices, hence McConnell does not recognize the problem of inoperability of fasteners due to gender incompatibility. Applicant's gender-bridging method, as recited in claim 51 and seen in Fig 10, permits like-gendered articles to be attached together and so solves a problem that is unrecognized by McConnell.

3. Applicant Teaches Unsuggested Modifications:

The optional addition of a gap with a twistable spanning element to the body of a foldable tie is a previously unsuggested modification.

This modification is described in independent claim 61 and seen in Figs 1, 3, 5, 6, and 14. McConnell has no suggestion, expressed or implied, that such a gap with a folding twisting axis is a useful or desirable modification of his skirt.

4. Applicant's Tie Omits Elements Deemed Essential By McConnell:

McConnell requires a zipper, a double interfacial pleat to tighten the skirt, and multiple patches of both hook and loop on both sides. Applicant's device omits most of these elements, yet Applicant's tie, appropriately sized, could easily serve the purpose of McConnell's tree skirt. The simplicity of Applicant's invention, as seen in Applicant's Fig 2, is remarkable, omitting all but one axis of folding, and all but one occurrence of a pair of gendered fasteners on each side.

5. The Unappreciated Advantages of Operation by a Reversible Fold:

McConnell's skirt has a fixed girth which is necessarily large enough for most trees. The zippered ends require a pleat to remove the slack and make the skirt snug around any chosen tree. McConnell did not appreciate the advantages of Applicant's reversible fold, because McConnell's skirt does not operate by folding-to-close. Using a reversible fold as the only operational step for closure represents an unappreciated advantage over all of the prior art for managing cables and the like.

6. Prior Lack of Implementation Indicates Unobviousness:

The elemental simplicity of Applicant's device has eluded the attention of previous designers. McConnell did not implement the simple features of Applicant's tie for a tree skirt. This further suggests that Applicant's tie is not obvious.

7. Applicant's Tie Makes a Significant Advance in a Crowded Art:

In spite of the multitude of different devices using gendered fasteners for managing moveable articles, Applicant's invention succeeds in making a much-needed contribution to the common problems it addresses. Applicant's tie transcends several commonly accepted limitations in the current practices of article management using touch-surface fasteners. This militates in favor of the unobviousness of Applicant's invention.

8. Applicant's Tie Has Synergism With Existing Devices:

McConnell's device is not intended to work cooperatively with devices that are not of the same invention. McConnell would not see a need to connect multiple trees together where they may not touch. McConnell would not see a need to connect trees together where the trees were encircled by other devices having fasteners with the same outwardly-exposed gender. Applicant's invention teaches a system of cooperation with existing gendered article management devices and sparks a true synergy with prior-art devices. The system taught by Applicant adds utility to

existing gendered devices by permitting them to be joined together in previously impossible combinations. By cooperating with the prior art, the collective result of the system of Applicant's invention is greater than the sum of its parts and represents a synergy with the prior art. Applicant's tie transcends the previously impossible by permitting joining without touching, and joining without regard to gender compatibility.

9. Applicant's Tie is Provided in Bulk Form:

Applicant's tie is provided in repeating sets of complementary segments comprising a bulk tie which may be divided into smaller, fully functional ties as specified by Applicant's dependent claims 30, 40, 50, 60, 66, 74 and 84. The modification of provision in bulk form is unsuggested by McConnell.

Therefore, Applicant submits that allowance of new claims 21 - 84 is proper, and he respectfully requests the same.

Claim Rejections - 35 USC §103

The Rejection On Lisenby In View Of Nowacki

The O.A. rejected claims 2, 7, 11, 17 and 19 as being unpatentable over Lisenby in view of Nowacki. The rejected claims 2, 7, 11, 17 and 19 are canceled and no reconsideration of this rejection is requested.

The Rejection On Lisenby In View Of Nowacki In View Of Neumann

The O.A. rejected claims 18 and 20 as being unpatentable over Lisenby in view of Nowacki as applied to claim 17, and further in view of Neumann. The rejected claims 18 and 20 are canceled and no reconsideration of this rejection is requested.

The Rejection On McConnell In View Of Nowacki

The O.A. rejected claim 15 as being unpatentable over McConnell in view of Nowacki. The rejected claim 15 is canceled and no reconsideration of this rejection is requested.

The Rejection On Lisenby In View Of Bryant

The O.A. rejected Claims 4, 8 and 13 as being unpatentable over Lisenby in view of Bryant. The O.A. considers that the cable wrap of Bryant teaches a discontinuity joined by a spanning link, which would be obviously combined with the folding seat belt reconfiguration apparatus of Lisenby to provide Applicant's invention.

Claims 4, 8 and 13 are canceled. Independent claim 61, and dependent claims 24, 25, 34, 35, 44, 45, 54, 55, 69, 78, and 79 are submitted in replacement. Applicant requests reconsideration of this rejection for the following reasons:

Applicant's Invention

Applicant's invention is discussed above.

Lisenby

Lisenby's apparatus is discussed above.

Bryant

Bryant teaches a cable wrap for grasping a cable at a single point. Bryant's wrap uses a single rigid cinch ring as one of two integral components of the device. The cinch ring is located in the body of a strap, near one end. The cable wrap of Bryant is used by wrapping the strap around a strand of the cable, and then inserting a free end of the strap through the open center of the cinch ring. This first step is undertaken to attach the cable wrap to the cable. The cable is then gathered into a bundle and the free end of the strap is wrapped back around the ring and cable, thereby wrapping the strap onto itself in a coil around the gathered cable. So wrapped and coiled onto itself, Bryant's cable wrap closes hook on one side of the strap to loop on the opposite side in a constricting closure around the gathered cable. Bryant strongly secures a gathered cable into a bundle which is held at a single point by the wound wrap.

Applicant's Tie Has General Distinctions Over The References

Bryant's Discontinuity Is Incidental: The O.A. (P 6, lines 12 - 15) states "The difference is that [Lisenby] lacks at least one discontinuity between segments". The O.A. (P 6, lines 15 - 17) further states that Bryant's device "suggests utilizing a discontinuity between segments of

the strap... and a spanning link... interconnecting the segments... so as to lend greater versatility to the strap".

Bryant's cinch ring is integral, and does not, as the O.A. suggests, "lend greater versatility to the strap". Rather the cinch ring, which Bryant refers to as a "ring member" (Col 1, line 50), is one of only two integral and essential components of the device. The cinch ring of Bryant provides the essential function of cinching the strap back around the cable. This initial cinching step is undertaken so that the wrap may be connected to the cable. The cable is then gathered and held in the gathered form by wrapping the free end of the strap in a wound coil around the bundled cable. Without the ring member, Bryant's cable wrap will not work as intended. Hence, the cinch ring does not lend greater versatility to the strap; rather it enables the essential function of the device. **Bryant's cable wrap will not work without the cinch ring.** Applicant's tie doesn't need a gap to fold and hold articles. Applicant teaches an optional gap which adds conformational flexibility to the tie. **Applicant's spanned discontinuity is not an essential component of the overall invention.**

Bryant's cinch ring is essential. The discontinuity found in Bryant's cable wrap is incidental. The cinch ring itself is the source of Bryant's discontinuity; the discontinuity is only present as part of the ring. Bryant's discontinuity is an unintended side effect of his cinch ring. **Bryant's discontinuity exists only to pass a free end of the strap through the center of the ring.**

Applicant's discontinuity intentionally adds twisting and flexing. The gap imparts the ability to freely rotate and independently flex the discontinuous segments of the tie. Applicant's discontinuity imparts user-electable variation in folding behavior. This is because Applicant's tie may be constructed with different antiplanar (back-to-back) placement of hook and loop on any tie segment. When so constructed with dissimilar back-to-back fasteners, twisting Applicant's segments at the gap provides variable closing upon folding, because the user can choose the sides to fold together.

Bryant's Discontinuity Serves a Different Purpose Than Applicant's Discontinuity: Bryant's discontinuity cannot be used to twist segments independently of each other. Applicant's discontinuity cannot be readily used as a cinch ring.

Applicant's discontinuity is spanned by a narrowed spanning element, which will not serve

the purpose of Bryant's rigid cinch ring because there is no open center in Applicant's gap (see below).

Bryant's discontinuity is an open space which accepts the free end of the strap in a cinching operation. There is no similar open space in the center of applicant's discontinuity, because the narrowed spanning element blocks the open space in the center of the gap. Applicant's discontinuity is a twisting and flexing component that is spanned by a narrowed, flexible spanning element.

The Flexible Twisting-Spanning Element of Applicant's Tie is Not The Same As The Open and Rigid Cinch Ring of Bryant: The cinch ring of Bryant's device does not impart a twisting axis, nor does it impart variability in closure upon folding, nor is the ring member of Bryant intended to impart conformational flexibility. Applicant's twisting-spanning element is necessarily flexible, since it twists and folds. The cinch ring of Bryant's device is necessarily rigid, since it creates a permanent and inflexible opening through which a free end of the strap is inserted. A flexible spanning element, as taught by Applicant's device, would not serve the purpose of a cinch ring such as Bryant's. Applicant's flexible spanning element, even if it were made as a loop large enough to pass the free end of the strap through, would collapse because of its flexibility. This lack of rigidity would make it exceedingly difficult to insert the free end of the strap through such a flexible opening, since the hook and loop elements immediately adjacent to the gap would adhere to the free end of the strap when inserted through a gap spanned by such a flexible element. **Applicant's narrow, flexible, twisting-spanning element is completely different from Bryant's rigid and open ring member.**

Applicant's New Claims Are Patentable Over The Proposed Combination Of References

Applicant submits that claims 61, 24, 25, 34, 35, 44, 45, 54, 55, 69, 78, and 79 are patentable over the proposed combination of the above two references because:

- (a) There is no legal justification or *prima facie* case for combining the references.
- (b) The references cannot be physically or operatively combined.
- (c) Even if the references could be legally and physically combined, Applicant's claims would still recite novel subject matter over the combination.
- (d) Applicant's novel subject matter produces new and unexpected results and is therefore unobvious.

Claim 61

These arguments will be reviewed with respect to the new independent claim 61.

(a) There is no legal justification or prima facie case for combining the references. In order for two or more references to be combined to meet a claim, there must be some teaching or reason stated in or implied from the references themselves to suggest the combination. The Lisenby and Bryant references do not contain any suggestion that they be combined, or that they be combined in the manner suggested. Here each reference is complete and operative in and of itself and neither reference contains any suggestion that any part or parts of it be combined with any other reference.

The tie of Lisenby would have no use or reason for incorporating Bryant's cinch ring. This is because Lisenby folds, while Bryant wraps. Lisenby seeks to enfold and hold two separated belt elements apart from one another in separate folds. Adding Bryant's cinch ring would not provide any utility or benefit to Lisenby. Cinching and then wrapping Lisenby would fail to provide the desired function of Lisenby's device, i.e. the adjustable separation of the two seat belt elements. Cinching Lisenby's two seat belt elements into a single bundle is contrary to the intended purpose of the device because Lisenby seeks to hold the belt elements physically separated for the wearer's comfort.

Bryant's cable wrap, on the other hand, would have no use for the folding strap of Lisenby. Bryant's wrap doesn't fold, rather it wraps around and cinches a bundle at a single point. Bryant has no use for the two folding axes of Lisenby, nor for the prescribed hook and loop placement on Lisenby's strap. **The references cannot be combined.**

Lisenby seeks to separate elements but Bryant seeks to gather elements into a single bundle; hence the two references objectively teach away from each other. Lisenby teaches a separation of two discrete belt elements in separated folds, while Bryant teaches wrapping to cinch and hold a gathered cable in a single bundle. Lisenby holds separated strands in discrete and separate folds. Bryant cinches a single bundle.

Bryant uses wrapping, but Lisenby uses folding; hence the two references operationally teach away from each other. The method of using Bryant's cinch ring is

contrary to the operational principle of Lisenby's folding device. The references of Lisenby and Bryant take different approaches to different problems, and are mutually exclusive.

(b) The references cannot be physically or operatively combined.

Even if the tie of Lisenby and the wrap of Bryant could be combined, the resulting combination would not work for either intended purpose.

The addition of Bryant's cinch ring to the folding tie of Lisenby would result in a device that would not close when wrapped, as taught by Bryant. If Bryant's cinch ring were placed at one of Lisenby's folding axes, and then folded closed, as taught by Lisenby, the resulting device would not close when wrapped, as taught by Bryant. This is because Lisenby's strap, when folded at Bryant's cinch ring, would only have hook and loop on the one unfolded side. Closure-upon-wrapping (Bryant) requires anti-planar (back-to-back) placement of hook and loop, but the proposed combination device would have both hook and loop on only one side of the strap at the cinch ring after folding, and neither hook nor loop on the other side of the strap at the wrapping point provided by the cinch ring. Hence, the combined devices of Lisenby and Bryant wouldn't close when folded and then wrapped.

(c) Even if the references could be legally and physically combined, Applicant's claim 61 would still recite novel subject matter over the combination.

The introduction of Bryant's cinch ring into the strap of Lisenby would not provide joining male to female upon reverse folding at the gap. Applicant's tie, as recited in claim 61, specifies, "first and second segments can be folded together in said first direction at said gap, such that said first and second segments will be placed in a first parallel orientation to form a first-side folded interface, and said first member type of said first pair on said first side of said first segment will be mated with said second member type of said first pair on said first side of said second segment, to form said releasable coupling inside said first-side folded interface, thereby forming said first folded form having both members of said second pair on the outsides; and said first and second segments can be folded together in said second direction at said gap, such that said first and second segments will be placed in a second parallel orientation to form a second-side folded interface, and said first member type of said second pair on said second side of said first segment will be mated with said second member type of said second pair on said second side of said second segment, to form said releasable coupling inside said second-side

folded interface".

Adding Bryant's cinch ring to Lisenby's apparatus would not provide Applicant's tie having both genders exposed on the outsides of the folded tie. Applicant's tie, as recited in claim 61 specifies, "said first folded form having both members of said second pair on the outsides" and, "said second folded form having both members of said first pair on the outsides".

The rigid ring member of Bryant would not provide Applicant's narrowed twisting-folding-spanning element. The rigid ring member of Bryant, combined with Lisenby's apparatus, would not permit twisting at the gap. Applicant's tie, as recited in claim 61, specifies; "said first and second segments being separated from one another by a gap, said gap being spanned by at least one narrowed twisting-folding-spanning element".

Thus Applicant's tie would still recite novel subject matter even if Bryant's ring member were added to Lisenby's apparatus.

(d) Applicant's novel subject matter as recited in independent claim 61 produces new and unexpected results and is therefore unobvious.

These new and unexpected results include:

1. Clustering is a New Principle of Operation:

Clustering, a novel technique which is enabled by the use of Applicant's tie, is a new principle of operation that is previously overlooked in the practice of article management. Clustering is a new and unexpected result that is made possible by the placement of both member-type fasteners on both sides of the tie and the presence of both hook and loop on the outsides of the folded tie.

2. Weak-Securement is a New Principle of Operation:

Weak securement, a method which is enabled by the use of Applicant's tie and shown in Fig 9, is a new principle of operation that is enabled by the novel placement of hook and loop on the outsides of the folded tie. The method is a solution to the unrecognized problem of excessive securement. Neither Lisenby nor Bryant recognize the problem of excessive securement. Adding Bryant's cinch ring to Lisenby's apparatus would not change the arrangement of Lisenby's

fasteners and would not enable weak securement as a method-of-use.

3. Same-Gender Bridging is a New Principle of Operation:

Same-gender bridging, a method which is enabled by the use of Applicant's tie and shown in Fig 10, is a new principle of operation. The method is a solution to the unrecognized problem of the strict requirement of gender compatibility for the use of gendered touch-surface fasteners. Neither Lisenby nor Bryant teach the value of combining their respective inventions with prior-art devices having incompatible genders. Hence, it would not be obvious to use either device to bridge between like-gender fasteners. Moreover, adding Bryant's cinch ring to Lisenby's apparatus would not enable same-gender bridging as a method-of-use or make the method obvious.

4. Spatial-Bridging is a New Principle of Operation:

Spatial bridging, a method which is enabled by the use of Applicant's tie and shown in Fig 10, is a new principle of operation. The method is a solution to the unrecognized problem of the strict requirement for direct physical contact for the use of touch-surface fasteners. Neither Lisenby nor Bryant teach the value of combining their respective inventions with prior-art devices that may not touch. Adding Bryant's cinch ring to Lisenby's apparatus would not enable spatial bridging as a method-of-use, nor would it make the method obvious.

5. The Advantages of a Reversible Fold:

The unappreciated advantage of a reversible fold as the one and only step in the operation of closure enables an unprecedented ease-of-use that is not obvious and has been overlooked by prior inventors. Adding Bryant's cinch ring to Lisenby's tie would not produce a tie capable of being operated with a reversible fold as specified in Applicant's claim 61.

6. Synergism With Existing Devices:

The tie attaches in clusters with closed others of its own kind, as well as to any of either hook or loop, which includes prior-art devices. The synergism arises from the novel placement of the fasteners on the outsides of the folded ties, as cited in claim 61. Applicant's tie provides a synergy that is not obvious in spite of its utility. Applicant's tie permits uses of the prior art that are presently impossible (clustering, weak securement, gender-bridging, spatial-bridging). Combining Lisenby with Bryant would not produce the unique features that spark synergism of Applicant's tie with existing devices of the prior art.

7. Provision in Bulk:

With repeating complementary segments, Applicant teaches provision of a device which may be used as-is, as well as used by separating the bulk tie into fully-functional subunits. This is a **modification that is wholly unsuggested by either Lisenby or Bryant**, both of whose devices are intended to be used alone and on a single item. There is no suggestion that Lisenby and Bryant combined would produce a bulk tie that would be subdivided into multiple devices. The provision in bulk is a useful and unobvious modification that is not suggested by the combined references of Lisenby and Bryant.

8. Modularity Is Non-Obvious:

Applicant's device is intended to be used alone as well as with others of its own kind. This modular capability is a non-obvious, new and unexpected benefit of the novel features of Applicant's tie as cited in claim 61. **There is no suggestion that the tie of Lisenby, modified by incorporating Bryant's cinch ring, would be used in a system of modular management utilizing others of its own kind with other gendered devices of the prior art.** Lisenby's tie is a stand-alone device not intended to be used with any others. Moreover, Lisenby's tie has no exposed fastener when it is folded closed, hence it cannot connect to other gendered devices when fully closed.

Therefore, Applicant submits that claim 61 recites novel and unobvious subject matter over the proposed combination of the references, and that allowance of this claim is proper. Applicant requests that claim 61 be allowed.

The dependent claims 62 - 66 incorporate all of the subject matter of claim 61 and add additional subject matter and therefore are a fortiori patentable over Bryant combined with Lisenby.

Moreover, Applicant's new dependent claims 24, 25, 34, 35, 44, 45, 54, 55, 69, 78, and 79 are independently patentable because they recite a flexible narrowed spanning-element that defines over the open and rigid ring member of Bryant combined with the apparatus of Lisenby.

Accordingly, it is respectfully requested that the rejection based on Lisenby in view of Bryant be withdrawn.

Applicant Acknowledges References Provided

In addition to the references cited in the § 102 and § 103 rejections, Applicant also acknowledges the patents cited as pertinent. These and other documents have been reviewed and found to present even further support for the allowance of present application because they show a crowded art that:

1. Fails to appreciate the value of reversible folding,
2. Fails to suggest the modification of a flexibly-spanned discontinuity,
3. Fails to appreciate the benefits of provision in bulk,
4. Fails to take implement modular clustered management,
5. Fails to recognize the problem of excessive securement,
6. Fails to recognize the problem of gender specificity, and
7. Fails to question the need for direct physical contact between touch-surface fasteners.

In spite of an abundance of gendered devices for managing articles, there is clearly much room for improvement in the systems and tools used. Applicant's tie provides many significant advancements in form and function. The simplicity of folding is well-known yet under-utilized in the prior art for article management. The utility of reversible folding-to-close is previously under-appreciated. The provision of devices in bulk form is widely appreciated, but under-represented in the prior art. The technique of clustering is previously obscure. The problem of excessive securement is previously unknown. The ability to bridge between like genders is previously undescribed. Applicant's tie addresses all of the above with simple elegance to provide a much-needed improvement in a crowded and mature art.

Conclusion

For all of the above reasons, Applicant submits that all claims now recite novel hardware and methods under § 102 (segmentation, both genders both sides across a medially placed reversible folding axis, a gap spanned by a flexible twisting element, modular method of clustering, method of same-gender bridging, method of spatial-bridging, method of weak-securement) and that these novel hardware and methods are also submitted to be unobvious and thus patentable under § 103 because they produce new and unexpected results (clustered modular management, provision in bulk, synergism with prior-art, previously impossible uses of prior-art, solution to the

unrecognized problem of excessive securement, solution to the unrecognized problem of gender specificity, and solution to the unrecognized problem of physical contact between touch-surface fasteners). Accordingly, Applicant submits that allowance of claims 21 - 84 is warranted and proper and he respectfully requests such action.

Applicant submits that this application is now in full condition for allowance, which action he respectfully solicits.

Conditional Request For Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define a novel structure and a system which is also unobvious. If, for any reason, this application is not believed to be in full condition for allowance, Applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. §2173.02 and §707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings. The Examiner is authorized to make any minor corrections.

Very respectfully,

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I certify that this correspondence will be deposited with the United States Postal Service as first class mail with proper postage affixed in an envelope addressed to: "Commissioner for Patents, PO Box 1450, Alexandria , VA 44313-1450" on the date below.

Date: 2003, September 18

Lawrence S. Dieterich, Applicant